

Application No.: 10/814,342

REMARKS

I. Introduction

In response to the pending Office Action, Applicants have amended claims 8, 11 and 12. Specifically, claims 8 and 11 has been amended further clarify the intended subject matter of the invention. Claim 12 was amended to overcome the § 112 rejection. Support for the amendment to claims 8 and 11 may be found, for example, in Examples 1, 3 and 5 of the specification. No new matter has been added.

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art.

II. The Rejection Of Claims 8-11 Under 35 U.S.C. § 102/103

Claims 8 and 10-12 were rejected under 35 U.S.C. § 102(e) as being anticipated by or alternatively under 35 U.S.C. § 103(a) as being unpatentable over Nakahara et al. (USP No. 6,866,964) and Nakahara et al. (USP No. 7,226,697); and under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) as being anticipated by or alternatively as being unpatentable over Nakahara et al. (WO 02/082570), although USP No. 7,226,697 is used to discuss WO 02/082570. Applicants respectfully submit that Nakahara '697, '570 and '964 fail to anticipate or render obvious the pending claims for at least the following reasons.

With regard to the present invention, amended claims 8 and 11 recite, in-part, an electrochemical device comprising an electrode current collector made of metal and an electrode material mixture attached on said electrode current collector, wherein said electrode material

Application No.: 10/814,342

mixture includes a composite material comprising an organic compound that serves as an active material and a carbonaceous material carrying said organic compound.

One feature of the present disclosure is that the electrode current collector is made of metal and a composite material comprising an organic compound that serves as an active material that is carried by a carbonaceous material. Carbonaceous materials have a large number of surface functional groups. As a result, a carbonaceous material can be readily bonded with organic compounds via a covalent bond, providing the surface of the material with a high number of active materials attached thereon. This gives the current collector excellent charge-discharge characteristics. For Example, Table 1 of the specification shows how batteries of the present disclosure retain their discharge capability after many cycles. However, in Comparative Example 1 in which the active material was not carried on the active carbon by covalent bonds, the discharge capacity was large at the first cycle, however, after that, the capacity lowered significantly, so that almost no discharge capacity was obtained at the 50th cycle.

In contrast to the present disclosure, each of the Nakahara references fail to disclose an electrode comprising an electrode current collector made of metal and an electrode material mixture including a carbonaceous material attached on the electrode current collector. Moreover, the Nakahara references fail to teach or suggest the excellent discharge characteristics obtained via use of the present disclosure. As such, Nakahara '964, Nakahara '570 and Nakahara '697 each fail to disclose all of the limitations of claims 8 and 11 of the present disclosure.

Anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently in a prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986). Also, in order to establish a *prima facie* case of

Application No.: 10/814,342

obviousness, each and every limitation must be disclosed or suggested by the combination of the prior art references (see, M.P.E.P. § 2143.03). Nakahara '964, Nakahara '570 and Nakahara '697 do not disclose or suggest an electrochemical device comprising an electrode current collector made of metal and an electrode material mixture attached on said electrode current collector, wherein said electrode material mixture includes a composite material comprising an organic compound that serves as an active material and a carbonaceous material carrying said organic compound. Therefore, it is clear that Nakahara '964, Nakahara '570 and Nakahara '697 fail to anticipate or render obvious claims 8 and 11 of the present invention. Applicants respectfully request that the § 102 and § 103 rejections of claims 8 and 11 be withdrawn.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claims 8 and 11 are patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

IV. Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication of which is respectfully solicited.


To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

Application No.: 10/814,342

including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

 *Res No 53,308*
for Michael E. Fogarty
Registration No. 36,139

600 13th Street, N.W.
Washington, DC 20005-3096
Phone: 202.756.8000 MEF:NDM
Facsimile: 202.756.8087
Date: August 29, 2008

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as our correspondence address.**